

ONTARIO'S AMBIENT AIR QUALITY CRITERIA

(Sorted by Contaminant Name)

**STANDARDS DEVELOPMENT BRANCH
ONTARIO MINISTRY of the ENVIRONMENT**

April 2012

PIBS # 6570e01

This document provides a list of the Ambient Air Quality Criteria (AAQCs) developed by the Ontario Ministry of the Environment (MOE).

An AAQC is a desirable concentration of a contaminant in air, based on protection against adverse effects on health or the environment. The term “ambient” is used to reflect general air quality independent of location or source of a contaminant. AAQCs are most commonly used in environmental assessments, special studies using ambient air monitoring data, assessment of general air quality in a community and annual reporting on air quality across the province.

AAQCs are set with different averaging times (e.g., 24 hour, 1 hour and 10 minutes) appropriate for the effect that they are intended to protect against. The effects considered may be health, odour, vegetation, soiling, visibility, corrosion or other effects. AAQCs may be changed from time to time based on new science.

If a contaminant has multiple AAQCs, each representing a different effect, all of them should be used for assessment purposes.

Organization of the document

This Summary is comprised of a table listing the AAQCs for each contaminant with the averaging time period(s) and limiting effect identified beside the respective value with explanatory footnotes.

The table consists of six columns:

- i) A simple row counter (Row);
- ii) The Chemical Abstracts Service Registry Number (CASRN);
- iii) The contaminant name listed in alphabetical order (Contaminant);
- iv) The AAQC concentration (AAQC $\mu\text{g}/\text{m}^3$);
- v) The averaging time period (Averaging Time);
- vi) The limiting effect that corresponds to the AAQC (Limiting Effect).

(Note: Another list, containing the same information but sorted according to CASRN, is also available on the MOE’s website).

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
1	75-07-0	Acetaldehyde	500	24 Hour	Health
			500	1/2 Hour	Health
2	64-19-7	Acetic acid	TBU - 2,500 ⁽²⁾	24 Hour	Odour
3	67-64-1	Acetone	11,880	24 Hour	Health
4	98-86-2	Acetophenone	1,167	1 Hour	Health
			850	10 Minute	Odour
5	75-05-8	Acetonitrile	70	24 Hour	Health
6	74-86-2	Acetylene	TBU - 56,000 ⁽²⁾	24 Hour	Odour
7	107-02-8	Acrolein	0.4	24 Hour	Health
			4.5	1 Hour	Health
8	79-06-1	Acrylamide	15	24 Hour	Health
9	107-13-1	Acrylonitrile	0.12	Annual	Health
			0.6	24 Hour	Health
10	124-04-9	Adipic acid	1,167	24 Hour	Health
11	N/A	Alkyltoluene sulphonamide, N-	120	24 Hour	Particulate
12	106-92-3	Allyl glycidyl ether	60	24 Hour	Health
13	300-92-5	Aluminum distearate	2,180	24 Hour	Health
14	1344-28-1	Aluminum oxide	120	24 Hour	Particulate
15	7047-84-9	Aluminum stearate	2,180	24 Hour	Health
16	637-12-7	Aluminum tristearate	2,180	24 Hour	Health
17	7664-41-7	Ammonia	100	24 Hour	Health
18	12125-02-9	Ammonium chloride	120	24 Hour	Particulate
19	123-92-2	Amyl acetate, iso-	53,200	24 Hour	Health & Odour
20	628-63-7	Amyl acetate, n-	53,200	24 Hour	Health & Odour
21	626-38-0	Amyl acetate, secondary	66,500	24 Hour	Health & Odour
22	7440-36-0	Antimony and compounds	25	24 Hour	Health
23	7440-38-2	Arsenic and compounds	0.3	24 Hour	Health
24	7784-42-1	Arsine	5	24 Hour	Health
			10	1/2 Hour	Health
25	1332-21-4	Asbestos (fibres > 5 μm in length)	0.04 fibres/cm ³	24 Hour	Health
26	7440-39-3	Barium - total water soluble	10	24 Hour	Health
27	71-43-2	Benzene	0.45	Annual	Health
			2.3	24 Hour	Health
28	50-32-8	Benzo(a)pyrene [as a surrogate of total Polycyclic Aromatic Hydrocarbons (PAHs)]	0.00001	Annual	Health
			0.00005	24 Hour	Health
29	65-85-0	Benzoic acid	700	24 Hour	Health
30	95-16-9	Benzothiazole	70	24 Hour	Health
31	98-88-4	Benzoyl chloride	125	24 Hour	Corrosion & Health
32	100-51-6	Benzyl alcohol	880	24 Hour	Health
33	7440-41-7	Beryllium and compounds	0.01	24 Hour	Health
34	92-52-4	Biphenyl	TBU - 60 ⁽²⁾	1 Hour	Odour
35	1303-96-4	Borax	33	24 Hour	Health
36	10043-35-3	Boric acid	33	24 Hour	Health
37	7440-42-8	Boron	120	24 Hour	Particulate
38	10294-33-4	Boron tribromide	35	24 Hour	Corrosion
39	10294-34-5	Boron trichloride	35	24 Hour	Corrosion
40	7637-07-2	Boron trifluoride	2	24 Hour	Vegetation
41	314-40-9	Bromacil	10	24 Hour	Health
42	7726-95-6	Bromine	20	24 Hour	Health
43	75-25-2	Bromoform	55	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
44	106-99-0	Butadiene, 1,3-	2	Annual	Health
			10	24 Hour	Health
45	71-36-3	Butanol, n-	920	24 Hour	Health
			2,100	10 Minute	Odour
46	75-65-0	Butanol, tertiary	30,300	24 Hour	Health
47	5131-66-8	Butoxy-2-propanol, 1-	3,300	24 Hour	Health
48	123-86-4	Butyl acetate, n-	15,000	1 Hour	Health
			1,000	10 Minute	Odour
49	141-32-2	Butyl acrylate	120	24 Hour	Particulate
50	3622-84-2	Butyl benzene sulphonamide, N-	35	24 Hour	Health
51	85-68-7	Butyl benzene phthalate	150	24 Hour	Health
52	123-95-5	Butyl stearate	120	24 Hour	Particulate
53	7440-43-9	Cadmium (and Cadmium Compounds)	0.005	Annual	Health
			0.025	24 Hour	Health
54	75-20-7	Calcium carbide	10	24 Hour	Corrosion
55	592-01-8	Calcium cyanide (as total salt)	120	24 Hour	Particulate
56	1305-62-0	Calcium hydroxide	13.5	24 Hour	Corrosion
57	1305-78-8	Calcium oxide	10	24 Hour	Corrosion
58	1592-23-0	Calcium stearate	35	24 Hour	Health
59	133-06-2	Captan	25	24 Hour	Health
60	1333-86-4	Carbon black	10	24 Hour	Soiling
61	75-15-0	Carbon disulphide	TBU - 330 ⁽²⁾	24 Hour	Odour
62	630-08-0	Carbon monoxide (multiple sources)	15,700 (13 ppm)	8 Hour	Health
			36,200 (30 ppm)	1 Hour	Health
63	56-23-5	Carbon tetrachloride	2.4	24 Hour	Health
64	133-90-4	Chloramben	120	24 Hour	Particulate
65	57-74-9	Chlordane	5	24 Hour	Health
66	7782-50-5	Chlorine	10	24 Hour	Health
			230	10 Minute	Odour
67	10049-04-4	Chlorine dioxide	2	24 Hour	Health
68	75-45-6	Chlorodifluoromethane (Freon 22) - see note #4	350,000	24 Hour	Health
69	75-00-3	Chloroethane	5,600	24 Hour	Health
70	67-66-3	Chloroform	0.2	Annual	Health
			1	24 Hour	Health
71	7440-47-3	Chromium compounds (hexavalent forms) - see note #13	0.00007 (Cr in PM ₁₀)	Annual	Health
			0.00014 (Cr in TSP)	Annual	Health
			0.00035 (Cr in PM ₁₀)	24 Hour	Health
			0.0007 (Cr in TSP)	24 Hour	Health
		Chromium compounds (metallic, divalent and trivalent forms) - see note #14	0.5	24 Hour	Health
72	77-92-9	Citric acid	120	24 Hour	Particulate
			300	1 Hour	Health
73	8007-45-2	Coal tar pitch volatiles - soluble fraction	0.2	Annual	Health
			1	24 Hour	Health
74	7440-48-4	Cobalt	0.1	24 Hour	Health
75	7440-50-8	Copper	50	24 Hour	Health
76	1319-77-3	Cresols	75	24 Hour	Health
77	506-77-4	Cyanogen chloride	12	24 Hour	Health
78	110-82-7	Cyclohexane	6,100	24 Hour	Health
79	127-20-8	Dalapon sodium salt	50	24 Hour	Health
80	17702-41-9	Decaborane	25	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
81	124-18-5	Decane, n-	60,000	1 Hour	Health & Odour
82	872-05-9	Decene, 1-	60,000	24 Hour	Health
83	1395-21-7	Detergent enzyme (Subtilisin)	0.06	24 Hour	Health
84	123-42-2	Diacetone alcohol	1,350	10 Minute	Odour
85	333-41-5	Diazinon	3	24 Hour	Health
86	117-81-7	Di(2-ethylhexyl) phthalate	50	24 Hour	Health
87	19287-45-7	Diborane	10	24 Hour	Health
88	111-92-2	Dibutyl amine	2,645	1 Hour	Health
89	84-74-2	Dibutyl phthalate (DBP, di-n-butyl phthalate)	50	24 Hour	Health
90	77-58-7	Dibutyltin dilaurate	30	24 Hour	Health
91	131-15-7	Dicapryl phthalate	120	24 Hour	Particulate
92	76-14-2	Dichloro-1,1,2,2-tetrafluoroethane, 1,2- (Freon 114) - see note #4	700,000	24 Hour	Health
93	95-50-1	Dichlorobenzene, 1,2-	30,500	1 Hour	Health
94	106-46-7	Dichlorobenzene, 1,4-	95	24 Hour	Health
95	75-34-3	Dichloroethane, 1,1-	165	24 Hour	Health
96	156-59-2	Dichloroethylene, cis-1,2-	105	24 Hour	Health
97	540-59-0	Dichloroethylene, sym-1,2-	105	24 Hour	Health
98	156-60-5	Dichloroethylene, trans-1,2-	105	24 Hour	Health
99	109-89-7	Diethyl amine	2,910	1 Hour	Health
100	84-66-2	Diethyl phthalate (DEP)	125	24 Hour	Health
101	112-34-5	Diethylene glycol monobutyl ether	65	24 Hour	Health
102	124-17-4	Diethylene glycol monobutyl ether acetate	85	24 Hour	Health
103	111-90-0	Diethylene glycol monoethyl ether	1,100	10 Minute	Odour
104	112-15-2	Diethylene glycol monoethyl ether acetate	1,800	24 Hour	Health
105	111-77-3	Diethylene glycol monomethyl ether	1,200	24 Hour	Health
106	75-71-8	Difluorodichloromethane (Freon 12) - see note #4	500,000	24 Hour	Health
107	84-75-3	Dihexyl phthalate (DHP)	50	24 Hour	Health
108	108-83-8	Diisobutyl ketone	3,500	24 Hour	Health
			649	10 Minute	Odour
109	127-19-5	Dimethyl acetamide, N,N-	300	24 Hour	Health
110	124-40-3	Dimethyl amine	1,840	1 Hour	Health & Odour
111	624-92-0	Dimethyl disulphide	56	10 Minute	Odour
112	115-10-6	Dimethyl ether	TBU - 2,100 ⁽²⁾	24 Hour	Odour
113	756-79-6	Dimethyl methylphosphonate	875	24 Hour	Health
114	131-11-3	Dimethyl phthalate (DMP)	125	24 Hour	Health
115	67-68-5	Dimethyl sulfoxide	2,100	24 Hour	Health
116	75-18-3	Dimethyl sulphide	30	10 Minute	Odour
117	109-55-7	Dimethyl-1,3-diamino propane, N,N-	20	24 Hour	Health
118	117-84-0	Di-n-Octyl phthalate	120	24 Hour	Health & Particulate
119	N/A	Dioxins, Furans and Dioxin-like PCBs - see note # 3	0.1 pg TEQ/m ³	24 Hour	Health
120	123-91-1	Dioxane	3,500	24 Hour	Health
121	646-06-0	Dioxolane-1,3	10	24 Hour	Health
122	122-39-4	Diphenylamine	17.5	24 Hour	Health
123	85-00-7	Diquat dibromide - respirable	0.032	24 Hour	Health
		Diquat dibromide - total in ambient air	0.160	24 Hour	Health
124	1886-81-3	Dodecyl benzene sulphonic acid	120	24 Hour	Particulate
125	2439-10-3	Dodine	10	24 Hour	Health
126	548-73-2	Droperidol	1	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
127	N/A	Dustfall	4.6 g/m ²	Annual	Soiling
			7 g/m ²	30 Day	Soiling
128	64-17-5	Ethanol (Ethyl alcohol)	TBU - 19,000 ⁽²⁾	1 Hour	Odour
129	141-78-6	Ethyl acetate	TBU - 19,000 ⁽²⁾	1 Hour	Odour
130	140-88-5	Ethyl acrylate	TBU - 4.5 ⁽²⁾	1 Hour	Odour
131	100-41-4	Ethyl benzene	1,000	24 Hour	Health
			1,900	10 Minute	Odour
132	60-29-7	Ethyl ether	8,000	24 Hour	Health
			950	10 Minute	Odour
133	104-76-7	Ethyl hexanol, 2-	TBU - 600 ⁽²⁾	1 Hour	Odour
134	763-69-9	Ethyl-3-ethoxy propionate	200	10 Minute	Odour
135	84-51-5	Ethylanthraquinone, 2-	10	24 Hour	Health
136	74-85-1	Ethylene	40	24 Hour	Vegetation
137	106-93-4	Ethylene dibromide	3	24 Hour	Health
138	107-06-2	Ethylene dichloride	0.4	Annual	Health
			2	24 Hour	Health
139	107-21-1	Ethylene glycol	12,700	24 Hour	Health
140	111-76-2	Ethylene glycol butyl ether (Butyl cellosolve)	2,400	24 Hour	Health
			500	10 Minute	Odour
141	112-07-2	Ethylene glycol butyl ether acetate (Butyl cellosolve acetate)	3,250	24 Hour	Health
			700	10 Minute	Odour
142	628-96-6	Ethylene glycol dinitrate	3	24 Hour	Health
143	110-80-5	Ethylene glycol ethyl ether (Cellosolve)	380	24 Hour	Health
			1,100	10 Minute	Odour
144	111-15-9	Ethylene glycol ethyl ether acetate (Cellosolve acetate)	540	24 Hour	Health
			300	10 Minute	Odour
145	112-25-4	Ethylene glycol monoethyl ether	2,500	24 Hour	Health
146	75-21-8	Ethylene oxide	0.04	Annual	Health
			0.2	24 Hour	Health
147	60-00-4	Ethylenediaminetetra acetic acid	120	24 Hour	Particulate
148	990-73-8	Fentanyl citrate	0.02	24 Hour	Health
149	1309-37-1	Ferric oxide	25	24 Hour	Soiling
150	7664-39-3	Fluoridation-as total fluorides, total (Growing Season)	40 $\mu\text{g}/100\text{cm}^2$	30 Day	Vegetation
		Fluoridation-as total fluorides, total (Non-Growing Season)	80 $\mu\text{g}/100\text{cm}^2$	30 Day	Vegetation
		Fluorides (as HF) - Gaseous (Growing Season)	0.34 (0.4 ppb)	30 Day	Vegetation
			0.86 (1 ppb)	24 Hour	Vegetation
		Fluorides (as HF) - Total (Growing Season)	0.69 (0.8 ppb)	30 Day	Vegetation
			1.72 (2 ppb)	24 Hour	Vegetation
		Fluorides (as HF) - Total (Non-Growing Season)	1.38 (1.6 ppb)	30 Day	Vegetation
			3.44 (4 ppb)	24 Hour	Vegetation
		Fluorides in dry forage-dry weight	60 ppm *	60 Day	Effects on animals
35 ppm**	30 Day		Effects on animals		
80 ppm***	30 Day		Effects on animals		
151	N/A	Fluorinert 3M-FC-70	120	24 Hour	Particulate
152	50-00-0	Formaldehyde	65	24 Hour	Health
153	64-18-6	Formic acid	500	24 Hour	Health
154	98-01-1	Furfural	TBU - 1,000 ⁽²⁾	1 Hour	Odour
155	98-00-0	Furfuryl alcohol	1,000	24 Hour	Health
156	111-30-8	Glutaraldehyde	14	24 Hour	Health
			35	1 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
157	52-86-8	Haloperidol	0.1	24 Hour	Health
158	142-82-5	Heptane, n-	11,000	24 Hour	Health
159	77-47-4	Hexachlorocyclopentadiene	2	24 Hour	Health
160	999-97-3	Hexamethyl disilazane	2	24 Hour	Health
161	4035-89-6	HDI Biuret (HDI-BT)	3	24 Hour	Health
162	3779-63-3	HDI Isocyanurate (HDI IC)	3	24 Hour	Health
163	822-06-0	Hexamethylene Diisocyanate (HDI) Monomer	0.03	24 Hour	Health
164	28182-81-2	HDI Polyisocyanate (HDI-BT and HDI-IC)	3	24 Hour	Health
165	124-09-4	Hexamethylenediamine	16	24 Hour	Health
166	111-49-9	Hexamethyleneimine	315	24 Hour	Health
167	107-41-5	Hexylene glycol	12,000	1 Hour	Health
168	10035-10-6	Hydrogen bromide	668	1 Hour	Health
169	110-54-3	Hexane, n- (part of a mixture)	2,500	24 Hour	Health
		Hexane, n- (n-Hexane and Hexane isomers only)	7,500	24 Hour	Health
170	7647-01-0	Hydrogen chloride	20	24 Hour	Health
171	74-90-8	Hydrogen cyanide	8	24 Hour	Health
172	7722-84-1	Hydrogen peroxide	30	24 Hour	Health
173	7783-06-5	Hydrogen sulphide	7	24 Hour	Health
			13	10 Minute	Odour
174	15438-31-0	Iron (metallic)	4	24 Hour	Health
175	78-83-1	Isobutanol	4,600	24 Hour	Health
			2,340	10 Minute	Odour
176	110-19-0	Isobutyl acetate	1,660	10 Minute	Odour
177	67-63-0	Isopropanol (Isopropyl Alcohol)	7,300	24 Hour	Health
178	108-21-4	Isopropyl acetate	2,000	10 Minute	Odour
179	98-82-8	Isopropyl benzene	400	24 Hour	Health
180	108-20-3	Isopropyl ether	110,000	24 Hour	Health
181	7439-92-1	Lead (and Lead compounds)	0.2(+)	30 Day	Health
			0.5	24 Hour	Health
182	58-89-9	Lindane (Hexachlorocyclohexane)	5	24 Hour	Health
183	7439-93-2	Lithium (other than hydrides)	20	24 Hour	Health
184	7580-67-8	Lithium hydrides	2.5	24 Hour	Health
185	1309-48-4	Magnesium oxide	120	24 Hour	Particulate
186	557-04-0	Magnesium stearate	35	24 Hour	Health
187	121-75-5	Malathion	120	24 Hour	Particulate
188	108-31-6	Maleic anhydride	30	24 Hour	Health
189	7439-96-5	Manganese and Manganese compounds	0.1 (Mn in PM _{2.5})	24 Hour	Health
			0.2 (Mn in PM ₁₀)	24 Hour	Health
			0.4 (Mn in TSP)	24 Hour	Health
190	N/A	Mercaptans - see note #5	13	10 Minute	Odour
191	120-78-5	Mercaptobenzothiazole disulphide	120	24 Hour	Particulate
192	7439-97-6	Mercury (Hg)	2	24 Hour	Health
		Mercury (as Hg) - alkyl compounds	0.5	24 Hour	Health
193	108-62-3	Metaldehyde (Acetaldehyde tetramer)	120	24 Hour	Particulate
194	79-41-4	Methacrylic acid	TBU - 2,000 ⁽²⁾	24 Hour	Odour
195	101-68-8	Methane diphenyl diisocyanate (MDI Monomer)	0.7	24 Hour	Health
196	67-56-1	Methanol (Methyl alcohol)	4,000	24 Hour	Health
197	70657-70-4	Methoxy-1-propyl acetate, 2-	1,530	24 Hour	Health
198	72-43-5	Methoxychlor	120	24 Hour	Particulate
199	96-33-3	Methyl acrylate	TBU - 4 ⁽²⁾	1 Hour	Odour

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
200	74-83-9	Methyl bromide	1,350	24 Hour	Health
201	74-87-3	Methyl chloride	320	24 Hour	Health
202	71-55-6	Methyl chloroform (1-1-1 Trichloroethane)	115,000	24 Hour	Health
203	78-93-3	Methyl ethyl ketone (2-Butanone)	1,000	24 Hour	Health
204	1338-23-4	Methyl ethyl ketone peroxide	80	24 Hour	Health
			200	1 Hour	Health
205	624-83-9	Methyl isocyanate	1	24 Hour	Health
206	108-10-1	Methyl isobutyl ketone	TBU - 1,200 ⁽²⁾	24 Hour	Odour
207	80-62-6	Methyl methacrylate	TBU - 860 ⁽²⁾	24 Hour	Odour
208	119-36-8	Methyl salicylate	100	24 Hour	Health
209	98-83-9	Methyl styrene, alpha	24,000	1 Hour	Health
210	1634-04-4	Methyl tert-butyl ether	7,000	24 Hour	Health
211	110-12-3	Methyl-2-hexanone, 5-	630	10 Minute	Odour
212	872-50-4	Methyl-2-pyrrolidone, N-	40,000	1 Hour	Health
213	110-43-0	Methyl-n-amyl ketone	4,600	24 Hour	Health
214	109-87-5	Methylal	6,200	24 Hour	Health
215	12108-13-3	Methylcyclopentadienyl manganese tricarbonyl (MMT)	10	24 Hour	Health
216	75-09-2	Methylene chloride	44	Annual	Health
			220	24 Hour	Health
217	101-77-9	Methylene dianiline	10	24 Hour	Health
218	75-11-6	Methylene iodide	65	24 Hour	Health
219	101-14-4	Methylene-bis-2-chloroaniline, 4,4-	10	24 Hour	Health
220	22832-87-7	Miconazole nitrate	5	24 Hour	Health
221	N/A	Mineral spirits - see note #6	2,600	24 Hour	Health
222	7439-98-7	Molybdenum	120	24 Hour	Particulate
223	108-90-7	Monochlorobenzene	3,500	1 Hour	Health
			4,500	10 Minute	Odour
224	74-89-5	Monomethyl amine	TBU - 25 ⁽²⁾	24 Hour	Odour
225	91-20-3	Naphthalene	22.5	24 Hour	Health
			50	10 Minute	Odour
226	90-15-3	Naphthol, alpha-	100	24 Hour	Health
227	7440-02-0	Nickel and Nickel compounds	0.02 (Ni in PM ₁₀)	Annual	Health
			0.04 (Ni in TSP)	Annual	Health
			0.1 (Ni in PM ₁₀)	24 Hour	Health
			0.2 (Ni in TSP)	24 Hour	Health
228	13463-39-3	Nickel carbonyl	0.5	24 Hour	Health
229	7697-37-2	Nitric acid	35	24 Hour	Corrosion
230	139-13-9	Nitrilotriacetic acid	120	24 Hour	Particulate
231	10102-44-0	Nitrogen dioxide - see note #7	200 (0.10 ppm)	24 Hour	Health
			400 (0.20 ppm)	1 Hour	Health
232	55-63-0	Nitroglycerin	3	24 Hour	Health
233	10024-97-2	Nitrous oxide	9,000	24 Hour	Health
234	111-65-9	Octane	61,800	10 Minute	Odour
235	111-66-0	Octene, 1-	50,000	24 Hour	Health
236	112-80-1	Oleic acid	5	1 Hour	Health
237	144-62-7	Oxalic acid	25	24 Hour	Health
238	90438-79-2	Oxo-heptyl acetate	85	24 Hour	Health
239	88230-35-7	Oxo-hexyl acetate	85	24 Hour	Health
240	10028-15-6	Ozone	165 (0.080 ppm)	1 Hour	Health
241	7657-10-1	Palladium - water soluble compounds	10	24 Hour	Health
242	1910-42-5	Paraquat dichloride - respirable	0.003	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
		Paraquat dichloride - total in ambient air	0.015	24 Hour	Health
243	N/A	Particulate matter (fine fraction) - PM _{2.5} - see note #8	30	24 Hour	See note #8
		Particulate matter - PM ₁₀ - see note #9	50	24 Hour	See note #9
244	1406-05-9	Penicillin	0.1	24 Hour	Health
245	19624-22-7	Pentaborane	1	24 Hour	Health
246	87-86-5	Pentachlorophenol	20	24 Hour	Health
247	127-18-4	Perchloroethylene	360	24 Hour	Health
248	108-95-2	Phenol	30	24 Hour	Health
249	75-44-5	Phosgene	45	24 Hour	Health
250	7803-51-2	Phosphine	10	24 Hour	Health
251	7664-38-2	Phosphoric acid - see note #10	7	24 Hour	Health
252	10025-87-3	Phosphorous oxychloride	12	24 Hour	Health
253	10026-13-8	Phosphorous pentachloride	10	24 Hour	Health
254	85-44-9	Phthalic anhydride	120	24 Hour	Particulate
255	2062-78-4	Pimozide	1	24 Hour	Health
256	7440-06-4	Platinum - water soluble compounds	0.2	24 Hour	Health
257	N/A	Polybutene-1-sulphone	120	24 Hour	Particulate
258	1336-36-3	Polychlorinated biphenyls (PCBs)	0.035	Annual	Health
			0.15	24 Hour	Health
259	9010-98-4	Polychloroprene	500	24 Hour	Health
260	9016-87-9	Polymeric methane diphenyl diisocyanate (PMDI)	0.7	24 Hour	Health
261	151-50-8	Potassium cyanide	120	24 Hour	Particulate
262	1310-58-3	Potassium hydroxide	14	24 Hour	Corrosion
263	7757-79-1	Potassium nitrate	120	24 Hour	Particulate
264	71-23-8	Propanol, n- (Propyl alcohol)	16,000	24 Hour	Health
265	123-38-6	Propionaldehyde	10	10 Minute	Odour
266	79-09-4	Propionic acid	TBU - 100 ⁽²⁾	1 Hour	Odour
267	123-62-6	Propionic anhydride (as Propionic acid)	TBU - 100 ⁽²⁾	1 Hour	Odour
268	109-60-4	Propyl acetate, n-	6,600	24 Hour	Health
269	115-07-1	Propylene	4,000	24 Hour	Health
270	78-87-5	Propylene dichloride	TBU - 2,400 ⁽²⁾	24 Hour	Odour
271	57-55-6	Propylene glycol	120	24 Hour	Particulate
272	107-98-2	Propylene glycol methyl ether	121,000	10 Minute	Odour
273	108-65-6	Propylene glycol monomethyl ether acetate	TBU - 5,000 ⁽²⁾	24 Hour	Odour
274	75-56-9	Propylene oxide	0.3	Annual	Health
			1.5	24 Hour	Health
275	110-86-1	Pyridine	150	24 Hour	Health
			80	10 Minute	Odour
276	106-51-4	Quinone	15	24 Hour	Health
277	7782-49-2	Selenium	10	24 Hour	Health
278	7803-62-5	Silane	150	24 Hour	Health
279	14464-46-1	Silica - respirable (<10 μm diameter), cristabolite	5	24 Hour	Health
280	14808-60-7	Silica - respirable (<10 μm diameter), quartz	5	24 Hour	Health
281	15468-32-3	Silica - respirable (<10 μm diameter), tridymite	5	24 Hour	Health
282	7440-22-4	Silver	1	24 Hour	Health
283	7631-90-5	Sodium bisulphite	120	24 Hour	Health & Particulate
284	7775-09-9	Sodium chlorate	6	24 Hour	Health
285	7758-19-2	Sodium chlorite	20	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
286	143-33-9	Sodium cyanide	120	24 Hour	Particulate
287	1310-73-2	Sodium hydroxide	10	24 Hour	Corrosion
288	7631-99-4	Sodium nitrate	7,000	24 Hour	Health
289	7772-99-8	Stannous chloride (as Sn)	10	24 Hour	Health
290	7440-24-6	Strontium	120	24 Hour	Particulate
291	1633-05-2	Strontium carbonate	120	24 Hour	Particulate
292	18480-07-4	Strontium hydroxide	120	24 Hour	Particulate
293	1314-11-0	Strontium oxide	120	24 Hour	Particulate
294	100-42-5	Styrene	400	24 Hour	Health
295	5329-14-6	Sulfamic acid	120	24 Hour	Particulate
296	7446-09-5	Sulphur dioxide	55 (0.02 ppm)	Annual	Health & Vegetation
			275 (0.10 ppm)	24 Hour	Health & Vegetation
			690 (0.25 ppm)	1 Hour	Health & Vegetation
297	2551-62-4	Sulphur hexafluoride	600,000	24 Hour	Health
298	7664-93-9	Sulphuric acid	5	24 Hour	Health
299	N/A	Suspended particulate matter (< 44 μm diameter)	60(++)	Annual	Visibility
			120	24 Hour	Visibility
300	14807-96-6	Talc - fibrous	2	24 Hour	Health
301	13494-80-9	Tellurium (except hydrogen telluride)	10	24 Hour	Health
302	4559-86-8	Tetrabutylurea	10	24 Hour	Health
303	109-99-9	Tetrahydrofuran	TBU - 93,000 ⁽²⁾	24 Hour	Odour
304	137-26-8	Tetramethyl thiuram disulphide	10	24 Hour	Health
305	62-56-6	Thiourea	20	24 Hour	Health
306	7440-31-5	Tin	10	24 Hour	Health
307	7440-32-6	Titanium	120	24 Hour	Particulate
308	13463-67-7	Titanium dioxide	34	24 Hour	Health
309	35711-34-3	Tolmetin sodium	5	24 Hour	Health
310	108-88-3	Toluene	TBU - 2,000 ⁽²⁾	24 Hour	Odour
311	584-84-9	Toluene di-isocyanate, 2,4-	0.2	24 Hour	Health
312	26471-62-5	Toluene di-isocyanate, 2,4- and 2,6- (mixed isomers)	0.2	24 Hour	Health
313	N/A	Total Reduced Sulphur (TRS) Compounds (Pulp, Paper and Paperboard Mills) - see notes #11, #12	14	24 Hour	Health
			13	10 Minute	Odour
		Total Reduced Sulphur (TRS) Compounds (other facilities) - see note #11	7	24 Hour	Health
			13	10 Minute	Odour
314	56-35-9	Tributyltin oxide	0.14	24 Hour	Health
315	120-82-1	Trichlorobenzene, 1,2,4-	400	24 Hour	Health
316	79-01-6	Trichloroethylene (TCE)	2.3	Annual	Health
			12	24 Hour	Health
317	75-69-4	Trichlorofluoromethane - see note #4	6,000	24 Hour	Health
318	76-05-1	Trifluoroacetic acid	15	24 Hour	Health
319	76-13-1	Trifluorotrchloroethane - see note #4	800,000	24 Hour	Health
320	75-50-3	Trimethyl amine	TBU - 0.5 ⁽²⁾	1 Hour	Odour
321	526-73-8	Trimethylbenzene, 1,2,3- (individual isomer or Trimethylbenzene mixture)	220	24 Hour	Health
322	95-63-6	Trimethylbenzene, 1,2,4- (individual isomer or Trimethylbenzene mixture)	220	24 Hour	Health
323	108-67-8	Trimethylbenzene, 1,3,5- (individual isomer or Trimethylbenzene mixture)	220	24 Hour	Health

Row	CASRN	Contaminant	AAQC ($\mu\text{g}/\text{m}^3$) ⁽¹⁾	Averaging Time	Limiting Effect
324	77-99-6	Trimethylol propane	1,250	24 Hour	Health
325	N/A	Tripropyltin methacrylate	1	24 Hour	Health
326	7440-61-1	Uranium and Uranium compounds	0.03 (U in PM ₁₀)	Annual	Health
			0.06 (U in TSP)	Annual	Health
			0.15 (U in PM ₁₀)	24 Hour	Health
			0.3 (U in TSP)	24 Hour	Health
327	7440-62-2	Vanadium	2	24 Hour	Health
328	75-01-4	Vinyl chloride	0.2	Annual	Health
			1	24 Hour	Health
329	75-35-4	Vinylidene chloride (1,1-Dichloroethene)	10	24 Hour	Health
330	81-81-2	Warfarin	10	24 Hour	Health
331	1330-20-7	Xylenes	730	24 Hour	Health
			3,000	10 Minute	Odour
332	7440-66-6	Zinc	120	24 Hour	Particulate
333	7646-85-7	Zinc chloride	10	1 Hour	Health
334	557-05-1	Zinc stearate	35	24 Hour	Health

Notes:

1: All AAQCs are expressed in micrograms per cubic metre unless otherwise noted next to the numeric value of the AAQC. For monitoring of some contaminants, parts per million (ppm) or parts per billion (ppb) are used. AAQCs as ppm or ppb have been converted from $\mu\text{g}/\text{m}^3$ assuming 10 °C and 760 mm Hg pressure.

2: TBU =To Be Updated. These odour-based limits (either 1-hour or 24-hour averaging period) are 'TBU' and have been flagged, because the MOE plans to update them in the future using an averaging time more relevant to odour effects (i.e., 10 minutes). In addition, these contaminants may need the development of health-based AAQCs. At this point, they provide the basis of the half-hour MOE standards and guidelines.

3: Application of the AAQC for dioxins, furans, and dioxin-like PCBs requires the calculation of the total toxicity equivalent (TEQ) concentration contributed by all dioxin-like compounds in the mixture. Table 1 below lists 29 specific dioxins, furans, and dioxin-like PCBs (along with the corresponding WHO₂₀₀₅ toxic equivalency factors (TEFs)) to which the AAQC would apply. The following formula should be used in order to calculate the total concentration of dioxins, furans and dioxin-like PCBs:

$$A = \Sigma(B \times C), \text{ where,}$$

A = the amount (or concentration) of total dioxins, furans and dioxin-like PCBs in TEQ

B = the amount (or concentration) of each dioxin-like compound listed in Table 1

C = the corresponding TEF for each dioxin-like compound listed in Table 1

For the purpose of calculating the total TEQ concentration for a mixture of dioxin-like compounds, a value of half the minimum detection limit (MDL) should be substituted for concentrations less than the MDL.

Table 1: 29 Dioxins, Furans, and Dioxin-Like PCBs to Which the New AAQC Apply

No.	Dioxins, Furans and Dioxin-like PCBs	CASRN	WHO ₂₀₀₅ Toxic Equivalency Factors (TEFs)
1	2,3,7,8-Tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]	1746-01-6	1
2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]	40321-76-4	1
3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]	39227-28-6	0.1
4	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]	57653-85-7	0.1
5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]	19408-74-3	0.1
6	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]	35822-46-9	0.01
7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]	3268-87-9	0.0003
8	2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]	51207-31-9	0.1
9	1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]	57117-41-6	0.03
10	2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]	57117-31-4	0.3
11	1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]	70648-26-9	0.1
12	1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-	57117-44-9	0.1

No.	Dioxins, Furans and Dioxin-like PCBs	CASRN	WHO ₂₀₀₅ Toxic Equivalency Factors (TEFs)
	HxCDF]		
13	1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]	72918-21-9	0.1
14	2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]	60851-34-5	0.1
15	1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]	67562-39-4	0.01
16	1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]	55673-89-7	0.01
17	1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF]	39001-02-0	0.0003
18	3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]	32598-13-3	0.0001
19	3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]	70362-50-4	0.0003
20	3,3',4,4',5- Pentachlorobiphenyl (PCB 126) [3,3',4,4',5-pentaCB (PCB 126)]	57465-28-8	0.1
21	3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]	32774-16-6	0.03
22	2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]	32598-14-4	0.00003
23	2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]	74472-37-0	0.00003
24	2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]	31508-00-6	0.00003
25	2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]	65510-44-3	0.00003
26	2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]	38380-08-4	0.00003
25	2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]	69782-90-7	0.00003
28	2,3',4,4',5,5'- Hexachlorobiphenyl [2,3',4,4',5,5'-hexaCB (PCB 167)]	52663-72-6	0.00003
29	2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]	39635-31-9	0.00003

This scheme is intended to be used with isomer specific analytical results.

Because there are 209 other possible PCBs, (i.e., the non-dioxin-like PCBs) these should continue to be evaluated against the existing AAQC for PCBs.

4: See O. Reg. 463/10 "Ozone Depleting Substances and Other Halocarbons" made under the Environmental Protection Act, which is based on the Montreal Protocol, for further restrictions on these, and several other ozone-depleting substances.

5: "Mercaptan" is defined as any organic compound that contains a thiol group. Mercaptans are expressed as methyl mercaptan; an amount (or concentration) of total mercaptans shall be calculated in accordance with the following formula:

$$A = \sum ((B \times 48) \div C)$$

A = the amount (or concentration) of total mercaptans, expressed as methyl mercaptan

B = the amount (or concentration) of each mercaptan,

C = the molecular weight of each mercaptan

6: "Mineral spirits" is defined as a petroleum distillate mixture of C₇ to C₁₂ alkanes (paraffins) and cycloalkanes (naphthenes) where the mixture is in the range from 5 to 20 per cent aromatics by weight, is less than 0.1 per cent benzene by weight, has a boiling point in the range from 130 to 220 °C and has a flash point in the range from 21 to 60 °C.

7: Nitrogen oxides (NO_x) are defined to be the sum of nitrogen dioxide (NO₂) and nitric oxide (NO). Emissions of NO_x consist mainly of NO, with some NO₂. In ambient air, NO converts to NO₂. NO₂ has adverse health effects at much lower concentrations than NO. Therefore, the AAQC is based on the health effects of NO₂.

For air quality assessments (e.g. annual air quality reports and special study reports) NO₂, not NO_x, is the reference contaminant. Therefore, NO₂ AAQCs with 1-hour and 24-hour averaging times should only be compared to monitored NO₂ data.

In the particular case of environmental assessments, modelling and postprocessing approaches such as those described in the US-EPA Guideline on Air Quality Models, can be used to develop conservative estimates of nitrogen dioxide concentrations for comparing to the NO₂ AAQCs.

8: This value is not an AAQC per se but is included here, together with the following guide, for decision-making.

This value of 30 µg/m³ (24 hr) is the Canada-wide Standard (CWS) for PM_{2.5}, developed jointly by the Federal government and the Provinces, including Ontario, as a step towards the long-term goal of minimizing the risk that fine particles impose on human health and the environment. Achievement of the PM_{2.5} CWS (by the year 2010) in various airsheds is to be based on the 24 hour 98th percentile ambient measurement annually, averaged over three consecutive years.

Ambient air PM_{2.5} is a regional pollutant and is of concern all across Ontario and north-eastern N. America. It is one of the two key components of smog. Emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds (VOCs), which are precursors of smog and PM_{2.5}, and also primary emissions of PM_{2.5} from individual sources, all contribute to it. In addition, these PM_{2.5} precursors are emitted from point, area, mobile and also from transboundary U.S. sources.

Broad-based emission reduction initiatives of all the precursors, from all the different types of sources, including primary PM emissions from individual point sources, are required and some are under way, to achieve the PM_{2.5} CWS.

Guide for decision making near individual sources:

In light of these factors, as a minimum, the contribution of primary PM_{2.5} from a single facility to ambient levels of PM_{2.5}, should be no more than 25 µg/m³ (24 hr), since if every source just aims for the 30 µg/m³ CWS ambient air target value, the various airsheds in Ontario may never reach the CWS target. This 25 µg/m³ (24 hr), with no conversion to other averaging times, can be used as a guide for decision making in the close vicinity of individual sources, which are primary emitters of PM_{2.5}.

9: This value of 50 µg/m³ (24 hr) is an interim AAQC and is provided here as a guide for decision making (with no conversion to other averaging times).

10: Phosphoric acid is expressed as total phosphoric acid and an amount (or concentration) of total phosphoric acid shall be calculated in accordance with the following formula:

$A = B + (C \times 1.40)$, where,
A = the amount (or concentration) of total phosphoric acid,
B = the amount (or concentration) of phosphoric acid,
C = the amount (or concentration) of phosphoric pentoxide

11: "Total reduced sulphur (TRS) compounds" means a mixture of reduced sulphur compounds and includes dimethyl disulphide, dimethyl sulphide, hydrogen sulphide and mercaptans. An amount (or concentration) of total reduced sulphur (TRS) compounds is calculated as the sum of the amounts (or concentrations) of the reduced sulphur compounds.

12: The 24-hour AAQC for Total reduced sulphur (TRS) compounds (Pulp, Paper and Paperboard Mills) should be used only when these facilities are the primary sources of the TRS emission.

13: Applies to pure Cr(VI) species or to the percentage of Cr(VI) species relative to total chromium.

14: Applies to Cr (metallic, divalent and trivalent) species alone or to the percentage of Cr (metallic, divalent and trivalent) relative to total chromium.

TERMS and SYMBOLS:

N/A: Not Available

- * - average of 2 consecutive months
- ** - average monthly results for growing season
- *** - average results for any single month

Growing Season: May 1 - September 30 - Northern Ontario, Northern Region
 April 1 - October 31 - Southern Ontario, SW, WC, E & C Regions

Non Growing Season: October 1 - April 30 - Northern Ontario, Northern Region
 November 1 - March 31 - Southern Ontario, SW, WC, E & C Regions

(+) = arithmetic mean
(++) = geometric mean